

Remarks

The present application is directed to a novel process for obtaining sodium bicarbonate from a compromised raw material. In accordance with applicant's invention, purge liquor from a sodium carbonate production facility is converted into a high-grade sodium bicarbonate product. Although the purge liquor from the carbonate production facility is a dark product, rich in impurities and having a minimal bicarbonate content, according to applicant's invention this purge stream is utilized to prepare sodium bicarbonate of surprisingly high quality, while reducing the volume of waste generated by the sodium carbonate production facility. This process is in contrast to the more typical prior art process in which trona ore is solution-mined, to produce purified sodium carbonate together with a large volume of sodium carbonate containing waste water, and the purified sodium carbonate is then converted into sodium bicarbonate.

Objection to Specification

With regard to the specification of the instant application, which is a continuation-in-part application, the Examiner has requested that the status of the parent case be updated. Thus, applicant presents below a replacement paragraph at page 1, line 1 to read as follows:

This application is a continuation-in-part of United States Patent Application 09/910,540, filed July 20, 2001, now abandoned, and the benefit of which is here claimed.

Rejection Under 35 U.S.C. § 112

Claim 1 has been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The cancellation of Claim 1 hereunder renders this rejection moot.

Rejection Under 35 U.S.C. § 102(e)

Claim 7 stands rejected under 35 U.S.C. § 102(e) as anticipated by Smith, U.S. 6,428,759 (hereinafter Smith). Smith is directed to solution mining of trona to produce sodium carbonate. Smith describes pumping water into a trona mine to dissolve sodium carbonate and sodium bicarbonate to form a brine. This brine is then neutralized, thereby converting at least a portion of the bicarbonate content of the trona into carbonate. In addition, Smith's brine stream is then fortified with calcined trona and fed to a crystallizer where crystals of sodium carbonate and its hydrates may be precipitated. See Smith at Column 3, lines 11-40. Smith further teaches that the monohydrate crystals may be separated from mother liquor by centrifuge, and a solution formed from melting crystals may be carbonated to form sodium bicarbonate. Col. 9, line 49 to Col. 10, line 10.

In contrast to Smith, which is directed to the production of sodium carbonate from trona, applicant's process starts with a waste stream containing sodium carbonate. Such a waste stream is a stream such as might flow away from Smith's production facility.

Significant differences between applicant's process and Smith's include the facts that:

1. Smith teaches how to get rid of, or eliminate, problematic bicarbonate, in stark contrast to applicant who is making bicarbonate.
2. Smith's solution mined liquor contains unwanted bicarbonate, but is otherwise relatively clean. Applicant's raw material is heavily contaminated with undesirable substances.
3. As described in applicant's specification, applicant makes a pure bicarbonate from a highly compromised, dirty starting material, whereas Smith makes bicarbonate as an ancillary matter using purified carbonate (soda ash) as his starting material.

Accordingly, Smith's process in no way anticipates or renders obvious applicant's invention, for applicant is concerned with, and is addressing, a very different set of process conditions involving different consideration. As recited in pending claim 7, applicant's process is directed to a method for reducing waste-water effluent from a bicarbonate plant, a matter neither contemplated nor addressed, either implicitly or explicitly, by Smith, and a novel and unanticipated result which could not be achieved by following the teachings of Smith. Applicant therefore respectfully requests that the rejection over Smith be withdrawn and that claim 7 be allowed.

The art cited and made of record, but not relied upon, is not seen as bearing on the patentability of applicant's invention. Accordingly, unless the Examiner specifically seeks applicant's comments on such art, applicant will not individually address those references.

Conclusion

Applicant believes that claim 7 clearly defines the invention, which is both novel and useful, and is not anticipated by the prior art. Accordingly, allowance of now pending claim 7 is respectfully solicited.

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Respectfully Submitted,



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